

# Step-by-Step Image Prep

One of the key secrets to any technical venture is for you to maximize your personal value added. I have found that spending enough extra time and effort to make product images outstanding can double or even triple your [eBay](#) or online [Bargain Page](#) sales.

I very strongly feel that you should...

***Spend an absolute minimum of two hours post-processing each web based sale image.***

Such time and effort can often pay for itself many times over. Especially on higher value or repeat sales. With care and practice, you can get really good at this.

While [Photoshop](#) is the usual preferred software for this sort of thing, I have found that plain old [Paint](#) combined with that [ImgViewer/32](#) image proc shareware you get from [Arcata Pet](#) is all I'll really need.

The object of image post-processing is to show the item in the best possible light. While not misrepresenting it in any way. Obvious easy stuff includes cropping, improving contrast or brightness, rotating (I prefer to work sideways or upside down; this lets you focus on details), scaling to size, and sharpening.

More subtle and more difficult tasks include improving the background and edge definition; doing an exact pixel justification for "perfect" horizontal and vertical lines; or "dodging" and "burning" images to equalize them.

Or filling in of missing details; removing dust specks and cathair; combining multiple scans into one, or upgrading lettering and callouts to improve legibility; eliminating or reducing shadows; adding detail to such things as pipe or connector threads; doing steganography and similar image protection; and minimizing possible JPEG artifacts.

As a typical ferinstance, say you have some reels of cable you want to sell. Let's look at what has to happen in what order. In order to keep our file sizes sane, we do have to make a compromise or two in this online presentation. So, please view this only at 100% or 200% magnification. Links will be given you later to the full size bitmaps. I urge you to start with these and practice doing the actual steps.

Live and real time.

In general, all of your post processing should get done **only** using uncompressed bitmaps. I like to work at least double final size wherever possible. This does an automatic anti-alias on the final size reduction. It also gives me enough resolution to control (or at least influence) most product lettering or callouts as well.

One question that needs asked early on...

## Camera or Scanner?

Let's see. Before its final cropping, a 700 by 700 pixel image is often appropriate for a serious item. Say half a million pixels. Working at twice final size quadruples this to two megapixels, or about a six megabyte RGB bitmap. I thus normally prefer to work with bitmaps in the six to ten megabyte range.

Cameras are obviously the choice for very large items, or where a "perspective" presentation will be best. Allowing for composition room, four megapixels of camera res is the bare minimum I'd recommend. Once again, it's of utmost importance that any and all initial images get saved in an uncompressed bitmap format. Tripods only, of course.

I usually prefer to use a scanner, since they have many hundreds of times the resolution of a camera. They also usually offer "perfect" lighting, set up faster, and greatly simplify the justification of horizontal and vertical lines. Scanners are obviously more suited to flat faced items. You do need a scanner with decent depth of field. I've found the [Hewlett-Packard C6260A](#) to do a good job.

You can scan amazingly large items, either by doing step and repeats or else using the scanner upside down on the subject itself.

More on these techniques appeared in [IMAGIMAG.PDF](#). Many examples of both scanner and camera work appear in our [eBay](#) and [Bargain Page](#) offerings.

In figure one, I've taken a piece of cable and scanned it. A tan piece of paper was placed over the cable, and the stock "enhance midtones" gamma correction and "millions of sharp colors" was selected.

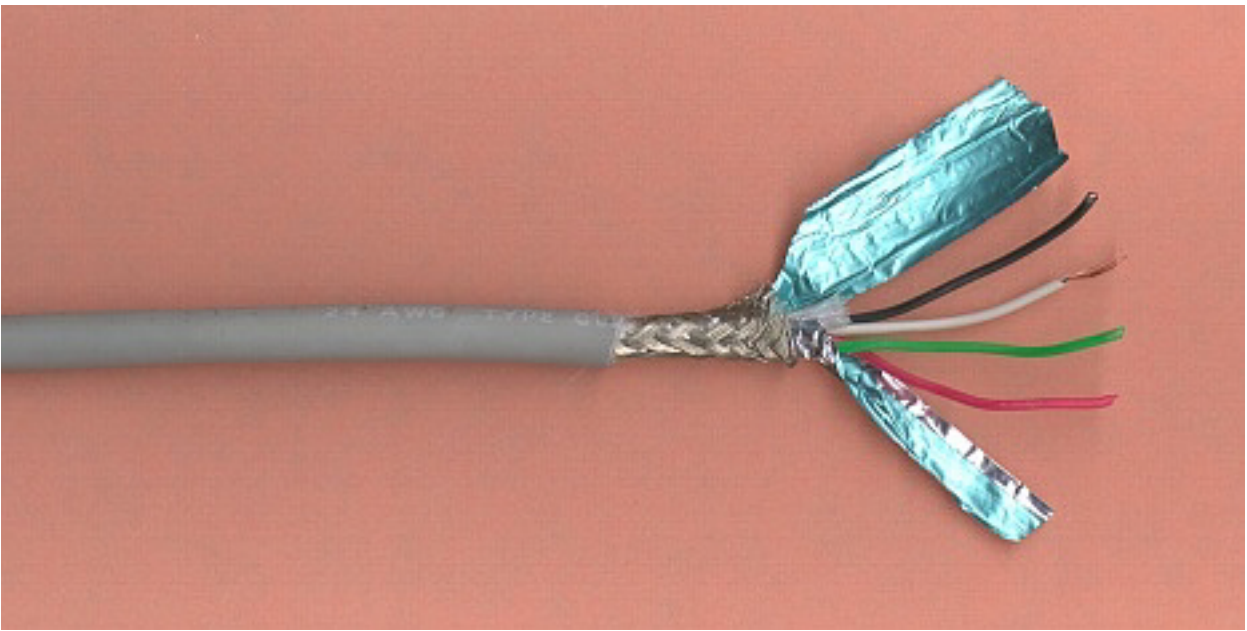
It is of utmost importance to thoroughly clean off your scanner glass immediately before each and every scan.

On other items, I will use a machinist's square to align items. The closer you get to true horizontal and vertical, the easier your final pixel justification will become. Props can be made from pieces of eraser or small wood blocks. Be sure to place them where they'll hide nothing important. "Variable" props are easily made from chopsticks or else notepads with a changing number of pages. Use Scotch Tape or whatever on cables to stabilize the item.

## Knockout Knockouts

The human eye is much better at resolving high contrast detail than it is color. It is also much more sensitive to edges than areas. An area that does not draw attention to itself sends interest elsewhere. These are some of the first principles of image enhancement.

FIG 1 — RAW SCANNED IMAGE READY TO POST PROCESS



Doing an entirely new background lets the object stand out. It also sharpens its edges, which may make other less sharp areas as noticeable. The process of isolating an object from its background is called **knocking out**. Sadly, the commercial knockout packages are largely useless for work in nondescript or shadow areas.

You'll have a choice of knocking out to a new uniform background, or knocking out to white and pasting over a fancier stock image. Note that Paint can accept "white" as "transparent" as a dragging or cut-and-paste option. Several **somewhat garish examples** are often found here.

While knocking out to white is usually easier, there is a deadly trap: Any white pixels inside the subject itself can "punch through" with disastrous results. The workarounds include hand patching or else converting all the "FF FF FF" bitmap triad values to "FE FE FE".

Watch this detail carefully.

I prefer to create a new uniform background. I usually start off with three or more brighter but nearby color pixels and make a random screen out of them. Being careful to avoid any doubles or triples. Such a random background has a modest "rich" texture that can be visually interesting. But more important, when you drag random length pieces of this against an edge, the tendency for later JPEG image "ghosting" artifacts gets dramatically reduced.

The exact colors do not matter all that much, since they will probably brighten and change later in the image prep. Earth tones, compatible pastels, or off grays are often your best choices here. Just be sure that all subject edges have a distinct contrast against your choice.

In figure two, we begin the image post prep by creating a brighter random background. This is edge aligned against a section of the cable on both sides. The cable itself has any offcolor or any otherwise disconcerting pixels removed for uniformity. Eventually, random background segments will be copied over the entire nonsubject portion of the image.

### Pixel Locking

Call it obsessive, but I like to force everything perfectly square that is supposed to be. To one pixel accuracy. Such a **Pixel Justification** gives you true horizontal and vertical edges without any jaggies. This technique works best with scanned images that have been carefully presquared.

A modest size chunk of the edge is then "chased" along. Extending it as needed. Use random lengths and update the background to reduce any later JPEG edge artifacts.

If your exact edge gets a pixel or two out of step with the original image, simply move the entire image up or down to match. But watch any internal details that may end up crooked if you do this. Details themselves may also have to be pixel locked.

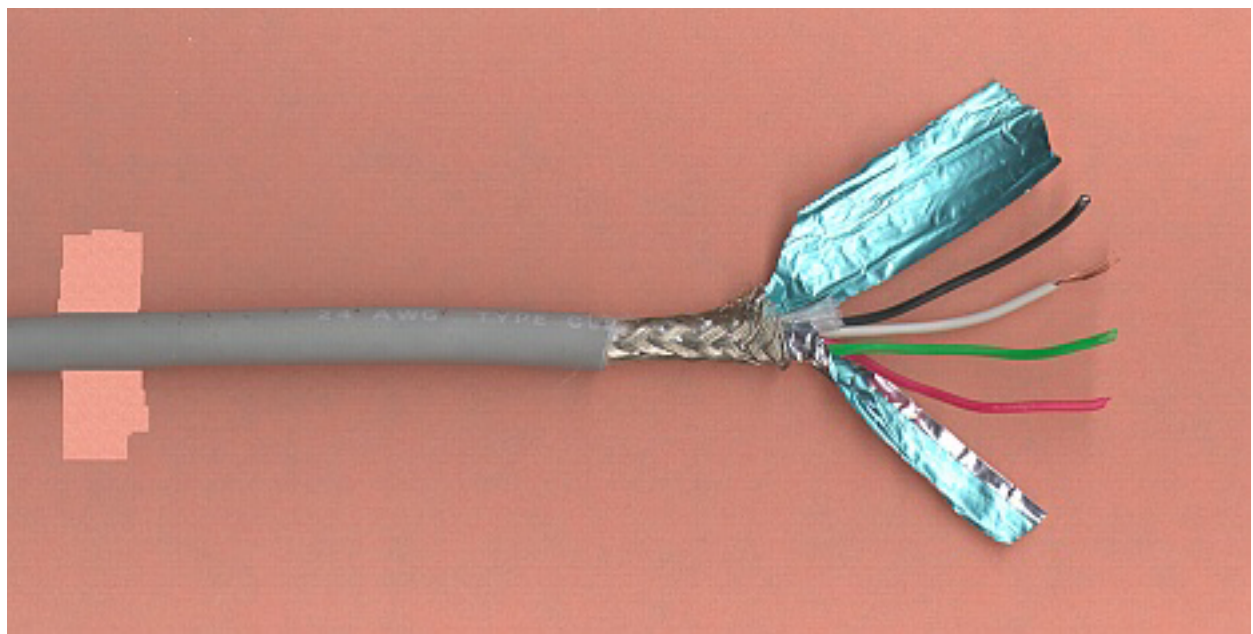
Some random tips: Use of Paint's flip, mirror, and rotate greatly simplifies any repeat corners, edges, or whatever. Temporarily putting a guideline out in the background can ease future alignment of noncontinuous edges. As can grabbing a thin slice of image and using it as a ruler. Most shadows can be minimized by towing their "brown" edges into their "black" portion. Or eliminated entirely.

Be sure to save copies of anything you might need later. Such as the lettering hint repasted into figure 3. In general, if you need extensive rework on something, do it first on the copy. Then paste it to your main image.

Most corners should be broken or rounded. One very nice "543" stock rounding is five pixels horizontally, then four pixels vertically, then three pixels off the remaining corner. Curved portions of edges often look best when the steps shorten in a "progressive" or log manner.

If you are using a camera, your perspective subject will often end up somewhat hexagonal. For these, I like to do the entire background first, starting at the bitmap edges. Then working towards the center of each newly redefined edge. Then the corner details. And finally anything missed.

**FIG 2 — BACKGROUND AND MAIN WIRE BODY CREATED**



### Adding Detail

Portions of your final image will end up pretty much the same as the original. Other parts will be retouched, while yet others might need totally new paintwork. The shielding braid in our original wire looks kinda mangy. So, as figure three shows us, we will rework it fairly extensively.

We first drag all the wires far enough right to make room for a new braid. We also copy the braid to a work area out in the background.

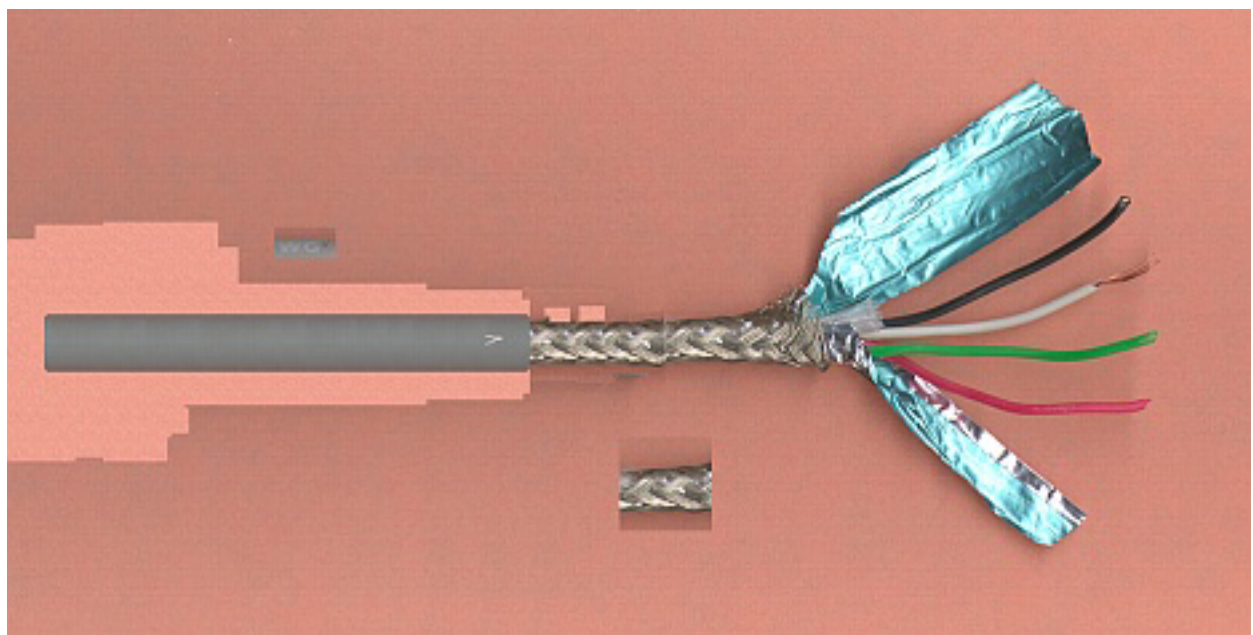
One "unit" of the nicest repeating pattern on the braid is

cut and repeatedly pasted to make the braid look like it is supposed to, rather than the way it is. The left end is forced into the gray cable to allow a perfect edge between cable and braid.

The background edges of the braid are purposely made "ragged" using a repeating pattern to suggest texture. The same works well with threads or anywhere else you want to create edge detail. Because the eye is better at detail than color, you don't particularly have to line up the edges with the colors or textures.

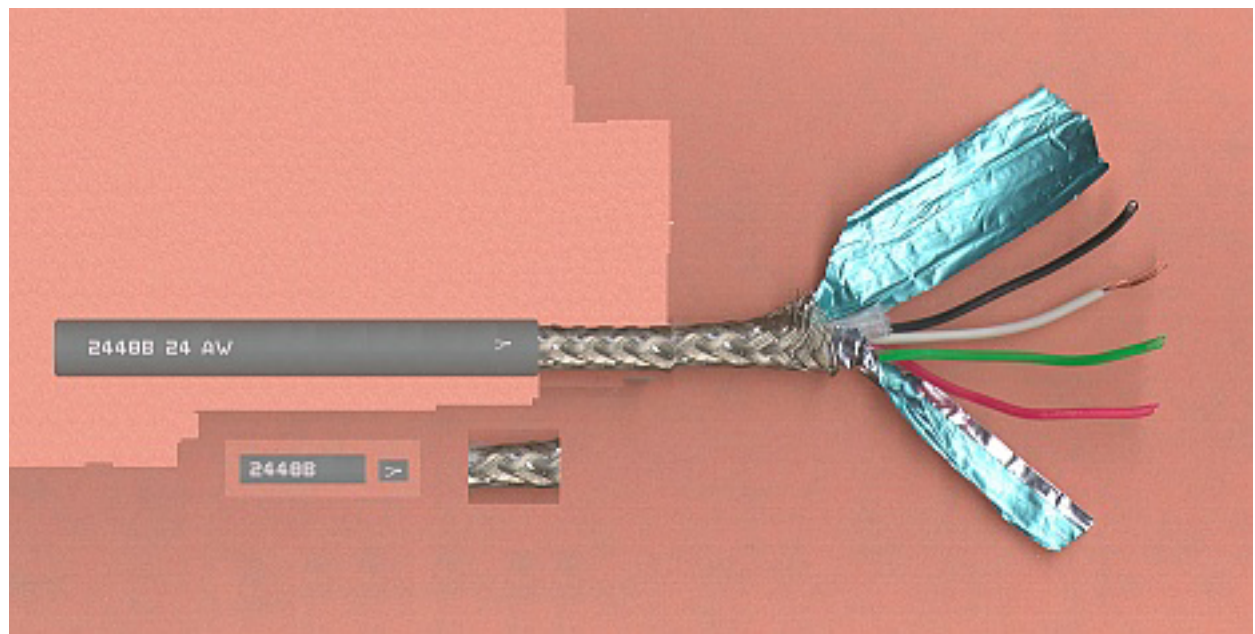
Sometimes detail can be pulled out of existing images by

**FIG 3 — BRAID COPIED AND ROOM MADE FOR NEW BRAID**





**FIG 4 — BRAID EDGE DETAILED AND RELETTERING BEGUN**



dramatically changing the contrast, brightness, and gamma on a new copy. You can then cut and paste. This is sort of like a traditional photographic "dodging" and "burning".

But is infinitely more flexible.

On things like feet or other external details, it is often best to simply create them from scratch and paste them in place. Be sure they don't draw attention to themselves.

By the way, when you are removing labels or whatever, working diagonally often will give you the least obvious retouching. The best way to correct small surface defects is often to cut and paste a nearby portion over them. Always

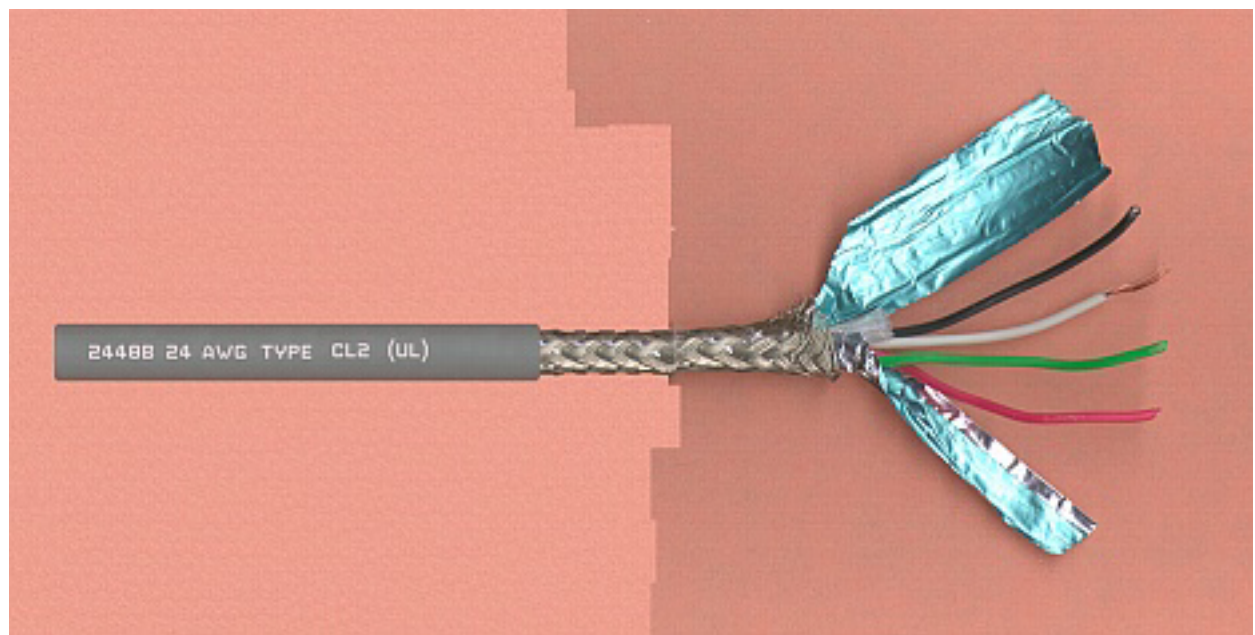
"jiggle" the placement before locking it to get the best overall visual effect.

### **Improving Lettering**

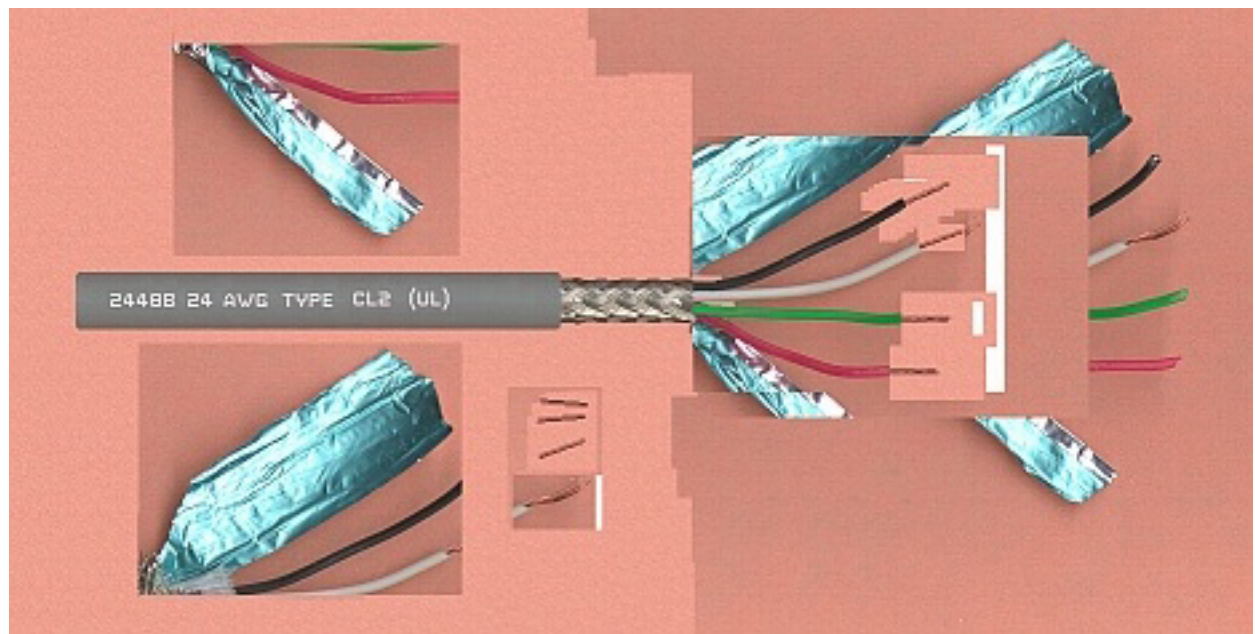
I very strongly feel that each and every callout on a piece of test equipment should be fully legible. The final image itself should be enough to tell the buyer exactly what the instrument does.

Perspective lettering is enormously difficult to properly retouch and should be avoided. Which gives us yet another advantage to using scanners. On flat subjects, your choices

**FIG 5 — BACKGROUND EXTENDED AND BRAID COMPLETED**



**FIG 6 — SHIELD COPIED AND NEWLY STRANDED WIRES REPLACED**



are to leave the lettering as it is, improve character edges, or replace the lettering entirely. Replacement can be done either with simple pixel bitmaps or true anti-aliasing.

I've created a new [Guru's Lair](#) library full of powerful new relettering tools and techniques. You can find this as our [AAFONT01.ASP](#) page.

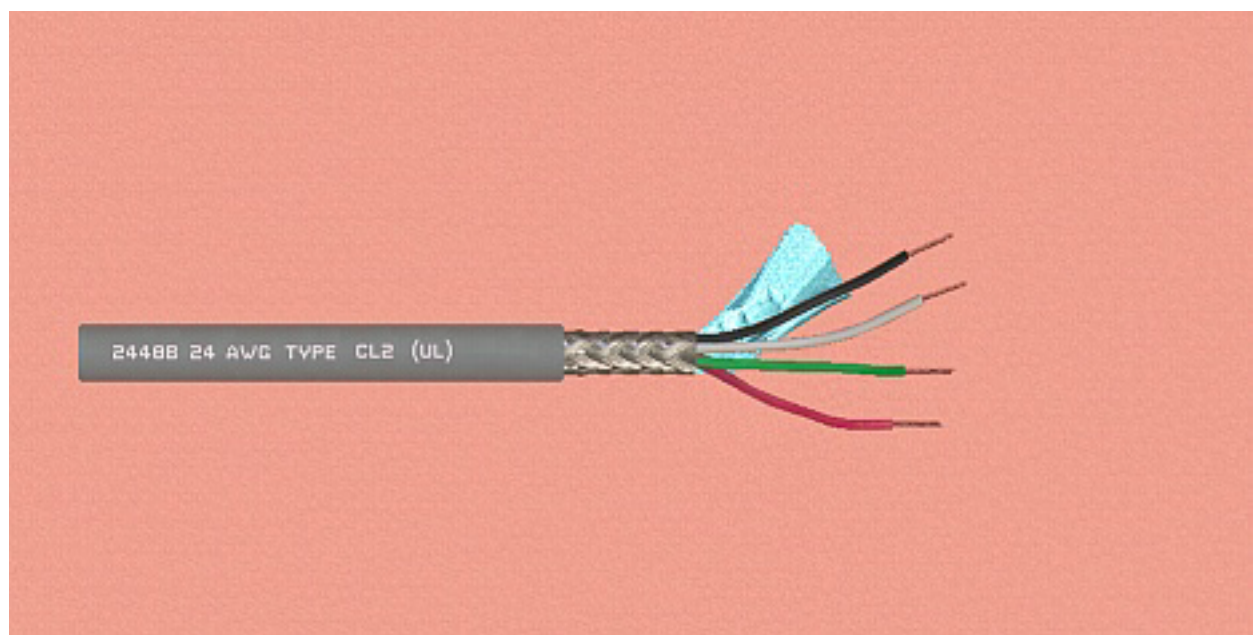
Simply cleaning up your background around each and every letter can make a big difference. You carefully round everything that needs rounded, and then selectively brighten insides where needed. Stay subtle. Overdone retouching is worse than none at all.

Sometimes you can "borrow" words or single letters from one portion and move them to another. This works well if only one or two words are too muddy to use.

For our wire, a simple relettering using a 8 x 10 pixel matrix should be good enough. You can get these off my website, or you can simply create them by hand when and as needed. Once you do a few characters, the rest can be copied from bits and pieces.

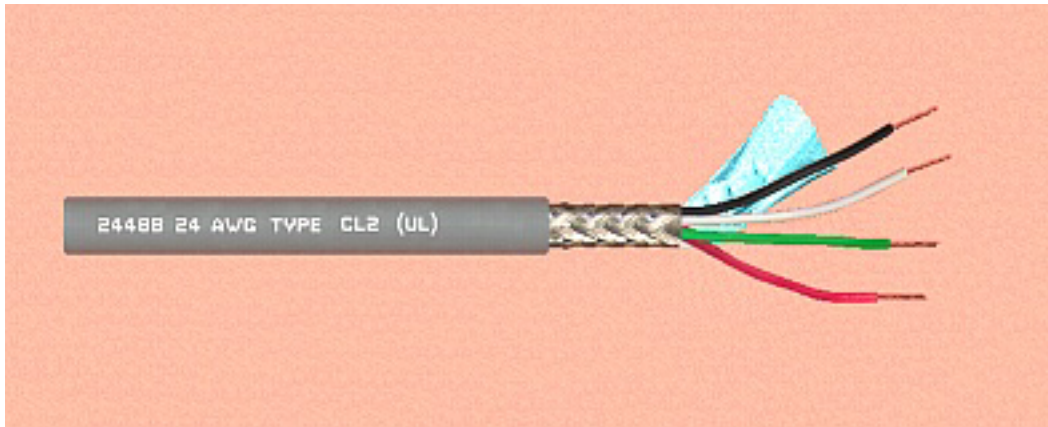
It is extremely important to keep the lettering colors subtle. The final reduction should anti-alias the lettering for you and make it appear credible.

**FIG 7 — NEW SHIELD REPOSITIONED AND KNOCKOUT FINISHED**





**FIG 8 — CROP, (ROTATE), (RESIZE), BRIGHTEN, SHARPEN, AND JPEG**



Yes, I've relettered entire oscilloscope panels. These new [website](#) tools and techniques can let you quickly do true antialiased bitmap fonts as fast as you can type.

### The Small Stuff

Work background, then edges, then big lumps, then fine detail. The original shield sort of overwhelms, so it can be copied to a background work area and dramatically reduced in size. And then placed at the end of the braid.

The left wire ends are first traced to white so they can transparently overlay the shield. Grouped wires are then drug back to abut the braid and overlay the shield.

The original faint hint of copper on the white wire is converted into four new credible strands of appropriate direction and length and pasted in place.

Details in figures six and seven.

### Final Reformatting

That should pretty much complete the Paint portion of our rework. We can now move our "good as it gets" bitmap into PhotoShop or [ImgViewer/32](#) to try and work yet some more magic into it.

First, you will resize, usually to one half. But make sure your lettering holds up. If it does not, then resize enough larger as needed. Next, you'll crop to subject, leaving just enough background of nearly equal width on all four sides to give an interesting composition.

Then you adjust gamma, contrast, and brightness to add "punch" to the image. I'll generally increase contrast and brightness but reduce gamma. Gamma favors either whites or blacks and is particularly useful to increase lettering contrast. Or otherwise enhance detail.

Next, you sharpen. But a little of this goes a long way. Too much creates speckle and white edge artifacts. Always do "too much" first and then back way, way off.

Finally, you save as a JPEG file, reducing the size to

something sane. Be sure to use "save as" rather than "save", or you will loose your hard earned reworked bitmap!

The final result appears in figure eight.

### For More Help

The "real" figures one through seven are large double sized vertical bitmaps. Which is why I've shown the figure eight scaling and rotation in parenthesis. Full size bitmaps of figures one through eight are available here...

[Figure One](#)

[Figure Two](#)

[Figure Three](#)

[Figure Four](#)

[Figure Five](#)

[Figure Six](#)

[Figure Seven](#)

[Figure Eight](#)

[Column Sourcecode](#)

The column sourcecode shows you how to directly add lots of JPG figures to a PDF doc with [Acrobat Distiller](#).

Be sure to check out our [Auction Help](#) and our [Blatant Opportunist](#) libraries. Followed up by the special stuff in our [Antialiased Fonts](#) library. Custom assistance is now available per our [InfoPack](#) services. ♦

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